UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,388	12/14/2001	William Salkewicz	4906.P001D	4091

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EXAMINER
VU, THONG H

ART UNIT	PAPER NUMBER
2142	

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Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/020,388	SALKEWICZ, WILLIAM
	Examiner	Art Unit	
	Thong H. Vu	2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>09 May 2006</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>6-30</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>6-30</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>5/06</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____ .

1.   Claims 6-30 are pending. Claims 1-5 are canceled.

Response to Arguments

2.   Applicant's arguments filed 5/09/06 with respect to claims 6-30 have been considered but

are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

3.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing

to particularly point out and distinctly claim the subject matter which applicant regards as the

invention. (i.e.: a first binding data structure in the memory which binds the first network

interface to the first sub-interface data structure. Examiner interprets any data structure as the

first binding data structure and any network interface as the first network interface.)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6-30 are rejected under 35 U.S.C. § 103 as being unpatentable over Dobbins et al

[Dobbins, 5,825,772] in view of Cisco et al [Radius Commands].

4.   As per claim 6, Dobbins discloses A network device comprising:

at least one processor; memory I/O [Dobbins, each local end system, col 2 lines 39-50], and at least one virtual network machine in the memory, said at least one first virtual <u>router</u> including a first network interface [Dobbins, the virtual router, col 6 lines 35-53]; and

a first (sub-interface) data structure in the memory, and a first binding data structure in the memory which binds the first network interface to the first (sub-interface) data structure [Dobbins, virtual directories and its inter-switch with dynamically bind a high level IP address to a low level physical hardware address, col 12 lines 40-53].

However Dobbins does not explicitly detail the data structure is created within Local Director that stores the virtual router using a subinterface data structure.

A skilled artisan would have motivation to improve the binding process using the data structure stored in the virtual router [Dobbins, col 6 lines 35-53] and found Cisco's Configuring ATM. Cisco discloses a router using Radius commands for configure the virtual interface and the sub-interfaces [Cisco, interface sub-interface name, page1]

Therefore it would have been obvious to an ordinary skill in the art at the time the invention was made to incorporate the binding the sub-interface with the interface as taught by Cisco into the Dobbins's apparatus in order to utilize the binding process with data structure in the virtual machine. Doing so would provide a scalable high-performance network where all links between switches can be used concurrently for connections [Dobbins, col 1 lines 56-59].

5.   As per claim 7, Dobbins-Cisco disclose the first network interface is a layer 3 network interface; the first sub-interface data structure is a layer 2 interface data structure; and the first

binding data structure is layer 2/3 binding structure which binds the first layer 3 network

interface to the layer 2 interface data [Dobbins, a high level and low level, col 12 lines 40-53].

6.   As per claims 8-12 contain the similar limitations set forth in claims 6. Therefore claims

8-10 are rejection for the same rationale set forth claim 6.

7.   As per claims 13-15 Dobbins-Cisco disclose eliminating the binding of the at least one

network interface to the at least one sub-interface data structure, providing at least one other sub-

interface data structure encoded in the electronic memory [Cisco, encryption, page 2]; binding

the at least one network interface to the at least one other sub-interface data structure [Cisco,

interface sub-interface name, page1].

8.   As per claims 16,17 Dobbins-Cisco disclose providing at least one other network

interface encoded in the electronic memory;

        binding the at least one other network interface to the at least one sub-interface data

structure; wherein binding the at least one other network interface to the at least one sub-

interface data structure includes creating a binding data structure that binds the at least one other

network interface to the at least one sub-interface data structure [Cisco, interface sub-interface

name, page1]; and

        eliminating the binding of the at least one network interface to the at least one sub-

interface data structure while leaving the at least one network interface intact [Dobbins, deleted

connection, col 13 lines 8-29].

9.   As per claim 18, Dobbins-Cisco disclose A method of creating a link in a network

domain comprising:

        providing a network device including an electronic memory encoded with a first virtual

router which includes at least one first network interface and with a second virtual router which

includes at least one second network interface [Cisco, encryption page 2];

        providing at least one first sub-interface data structure encoded in the electronic memory,

providing at least one second sub-interface data structure encoded in the electronic memory

[Cisco, encryption, page 2];

        binding the at least one first network interface to the at least one first sub-interface data

structure [Cisco, interface sub-interface name, page1]; and

        binding the at least one second network interface to the at least one second sub-interface

data structure [Dobbins, a second switch, col 9 lines 40-50].

10.   As per claim 19, Dobbins-Cisco disclose binding the at least one first network interface

to the at least one first sub-interface data structure includes creating a first binding data structure;

and binding the at least one second network interface to the at least one second sub-interface data

structure includes creating a second binding data structure [Dobbins, dynamically binding, col 12

lines 40-53].

11.   As per claim 20, Dobbins-Cisco disclose binding the at least one second network

interface to the at least one first sub-interface data structure; and eliminating the binding of the at

least one second network interface to the at least one second sub-interface data structure

[Dobbins, deleted node, col 11 lines 1-5].

12.   As per claim 21, Dobbins-Cisco disclose providing respective first and second network

databases associated with the respective first and second virtual network machines wherein such

respective first and second databases [Dobbins, master-slave database, col 14 lines 17-35]

include one or more types of control information used to manage or monitor operations, selected

from the group consisting of: network (layer 3) addressing, layer 3 connections, routing, routing

protocols, route filters and policies, tunneling, tunneling protocols as inherent features of

database.

13.   As per claim 22, Dobbins-Cisco disclose providing respective first and second network

databases associated with the respective first and second virtual routers wherein such respective

first and second databases include control information used to manage or monitor operations

[Dobbins, master-slave database, col 14 lines 17-35];

network (layer 3) addressing, layer 3 connections, routing, routing protocols, route filters

and policies, tunneling, tunneling protocols [Dobbins, a high level and low level, col 12 lines 40-

53];

binding the at least one first network interface to the at least one first sub-interface data

structure includes creating a first binding data structure; and binding the at least one second

network interface to the at least one second sub-interface data structure includes creating a

second binding data structure [Cisco, create a PVC, page 15].

14.   As per claim 23, Dobbins-Cisco disclose providing respective first and second network

databases associated with the respective first and second virtual routers wherein such respective

first and second databases include one or more types of control information used to manage or

monitor operations [Dobbins, monitoring, col 1 lines 52-59],

network (layer 3) addressing, layer 3 connections, routing, routing protocols, route filters

and policies, tunneling, tunneling protocols [Dobbins, a high level and low level, col 12 lines 40-

53];

binding the at least one first network interface to the at least one first sub-interface data

structure includes creating a first binding data structure; binding the at least one second network

interface to the at least one second sub-interface data structure includes creating a second binding

data structure; binding the at least one second network interface to at least one first sub-interface

data structure [Cisco, create a PVC, page 15]; and

eliminating the binding of the at least one second network interface to the at least one

second sub-interface data structure [Dobbins, deleted node, col 11 lines 1-5].

15.   As per claim 24, Dobbins-Cisco disclose A method of creating links between multiple

subscriber end stations and multiple network domains comprising:

providing a network device including an electronic memory encoded [Dobbins, security

policy, col 17 lines 22-43] with multiple respective virtual routers, said respective virtual

network machines including respective corresponding network databases which include

respective control information that respectively imparts router functionality to corresponding

respective virtual routers [Dobbins, master-slave database, col 14 lines 17-35];

said respective virtual routers respectively each including at least one respective network

interface for a respective network domain [Dobbins, DNS, col 4 line 31];

providing respective subscriber records (i.e.: database) in an electronic memory that

include respective information as to network domains to which respective subscriber end stations

of respective subscribers may access [Dobbins, master-slave database, col 14 lines 17-35];

providing multiple respective sub-interface data structures in the electronic memory

respectively associated with respective subscribers [Cisco, configure structure, page 56];

searching respective subscriber records to identify respective network domains that may

be accessed by a respective subscriber end station of a respective subscriber [Dobbins, searching

its route table, col 24 lines 53-57]; and

creating respective binding data structures that respectively bind respective sub-

interface data structures respectively associated with respective subscribers to respective network

interfaces for respective network domains identified from searching respective subscriber records

[Cisco, create a PVC, page 15].

16.   As per claim 25, Dobbins-Cisco disclose providing respective subscriber authentication

information and respective subscriber authorization information in respective subscriber records;

providing subscriber authentication and authorization services; and authenticating and

authorizing subscriber access to respective network domains using respective subscriber records

and the subscriber authentication and authorization services as inherent features of security

policy [Dobbins, security policy, col 17 lines 22-43].

17.   As per claim 26, Dobbins-Cisco disclose the multiple respective sub-interface data

structures include multiple respective virtual circuits [Dobbins, VLAN, col 8 line 17-col 10 line

65].

18.   As per claim 27, Dobbins-Cisco disclose providing in respective subscriber records

multiple possible network domain binding options for a respective subscriber [Dobbins, VLAN

switch domain, multiple VLANs, Fig 1].

19.   As per claim 28, Dobbins-Cisco disclose information in respective subscriber records

identify multiple respective possible network domains to which respective subscriber end

stations of respective subscribers may be bound; and Information in respective subscriber records

provide respective criteria for selecting between multiple respective network domains for a

respective subscriber [Dobbins, VLAN switch domain, multiple VLANs, Fig 1].

20.   As per claim 29, Dobbins-Cisco disclose A subscriber management system comprising:

       a network device including an electronic memory encoded with multiple respective

virtual routers in the memory, said respective virtual routers including corresponding respective

network databases which include respective control information, said respective virtual routers

respectively including at least one respective network interface to a respective network domain
[Dobbins, VLAN switch domain, multiple VLANs, Fig 1]

respective subscriber records in an electronic memory that include respective information
as to network domains to which respective subscriber end stations of respective subscribers may
be bound [Dobbins, master-slave database, col 14 lines 17-35];

multiple respective sub-interface data structures in the electronic memory respectively
associated with respective subscribers [Cisco, interface sub-interface name, page1];

a computer program in electronic memory that searches respective subscriber records to
identify respective network domains that may be accessed by respective subscriber ends stations
of respective subscribers [Dobbins, VLAN switch domain, multiple VLANs, Fig 1]; and

respective binding data structures that respectively bind respective sub-interface data
structures associated with respective subscribers to respective network interfaces to respective
network domains identified from searching respective subscriber records [Dobbins, searching its
route table, col 24 lines 53-57].

21.   As per claim 30, Dobbins-Cisco disclose information in respective subscriber records
identify multiple respective possible network domains to which respective subscriber end
stations of respective subscribers may be bound; and information in respective subscriber records
provide respective criteria for selecting between multiple respective network domains for
respective subscribers [Dobbins, VLAN switch domain, multiple VLANs, Fig 1].

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner *Thong Vu*, whose telephone number is (571)-272-3904. The examiner can normally be reached on Monday-Thursday from 6:00AM- 3:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, *Andrew Caldwell*, can be reached at (571) 272-3868. The fax number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval IPAIRI system. Status information for published applications may be obtained from either Private PMR or Public PMR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thong Vu
Primary Examiner
Art Unit 2142